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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,523	06/09/2006	Yingmin Wang	14565.0008USWO	8042
23552 7590 03/11/2009 MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903				
EXAMINER				
PHU, PHUONG M				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/562,523

**Applicant(s)**

WANG ET AL.

**Examiner**

Phuong Phu

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 3/15/06, 9/26/06

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This Office Action is responsive to the Preliminary Amendment filed on 12/27/05.  
Accordingly, claims 1-15 are currently pending.

#### *Claim Objections*

2. Claims 1-15 are objected to because of the following informalities:

Claim 1 recites the limitations "the midamble code" and "the spread spectrum code".

These limitations are lack of antecedent basis.

Appropriate correction is required.

Claims, depended on claim 1, are therefore also objected.

#### *Claim Rejections - 35 USC § 101*

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-15 are rejected under 35 U.S.C. 101 as not failing within one of the four statutory categories of invention. While the claim recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101. must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Process' under 35 U.S.C. 101"). The instant claim neither transform underlying subject matter *nor positively tie to another statutory category that accomplishes the claimed method steps*, and therefore do not qualify as a statutory process

The specific link to the Processes memo is  
[http://www.uspto.gov/web/offices/pac/dapp/opla/preoqnotice/section\\_101\\_05\\_15\\_2008.pdf](http://www.uspto.gov/web/offices/pac/dapp/opla/preoqnotice/section_101_05_15_2008.pdf)

Claims 1-15 claim a method comprising steps "performing channel estimation...", "selecting interference code channels...", "performing matched filtering..." and so on. These

steps do not positively tie to another statutory category, e.g. an electronic device, an electronic components, etc., that accomplishes the steps. The claimed steps are of sufficient breadth that it would be reasonably interpreted as steps completely performed mentally, verbally or without machine.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Sourour (6,865,218).

-Regarding claim 1, Sourour discloses a method for detecting orthogonal code CDMA signal, comprising:

procedure (inherently included) of performing channel estimation to obtain a set of propagation path channel coefficients “{  $\beta e^{j\gamma}$  }” in the serving cell comprising a plurality of users (USER 1,..., USER N) (see figure 1, col. 9, lines 18-22), (the set of propagation path channel coefficients considered here equivalent with the limitation “channel response estimation results of all users in the serving cell”), wherein the propagation path channel coefficients “{  $\beta e^{j\gamma}$  }”, (inherently being propagation path characteristics), can be estimated by using a midamble code “pilot channel information” included in a received CDMA signal (see col. 7, lines 7-15) ;

procedure (204) of selecting interference code channels ((1,2), (1,3), (2,1), (2,3), (3,1), (3,2)) involved in the estimation and estimating the total power of interference to multi-path

signals (outputted from (218) by utilizing the channel response estimation results of all users in the serving cell (see figure 7, col. 9, line 18 to col. 12, line 30);

procedure (202) of performing matched filtering on the received signal with respect to each multi-path signal (inputted to (210)'s) of each code channel (PATH 1, PATH 2, PATH 3) by utilizing a spread spectrum code (PN CODE) and the channel response estimation result ( $\{\beta e^{j\tau}\}$ ) thereof for the user to be detected (see figures 7, 9, col. 9, line 55 to col. 10, line 12), and

procedure (212, 206, 218, 216) of performing an optimal combining, (considered here equivalent with the limitation "maximum-ratio combining"), on the matched filtering results (outputted from (210)'s) of the multi-path signals by utilizing the total power of interference (derived from (214)'s) to the multi-path signals, to obtain the optimized matched filtering result of interest (outputted from (206) (see figures 7, 7A, col. 8, lines 25-36, col. 9, lines 18-54), and obtain the orthogonal code CDMA signal detection result being the optimized matched filtering result (see figure 4, col. 7, lines 28-35).

-Regarding claim 2, as applied to claim 1, Sourour teaches that selecting the interference code channels involved in the estimation is configurable to select all the code channels (PATH 1, PATH 2, PATH 3, and so on (see col. 8, lines 31-36)) in the serving cell as the interference code channels involved in the estimation, if it is selected not to perform, or namely without performing, joint detection (see figure 4) ; and that the optimized matched filtering result obtained is taken as the orthogonal code CDMA signal detection result (see figure 4, col. 7, lines 28-35).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Phuong Phu** whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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